LETTERS TO THE EDITORS

The Editors invite readers to submit letters commenting on the contents of articles that appear in the Journal. Also welcome are brief communications in letter form reporting investigative or clinical observations without extensive documentation and with brief bibliography (five titles or less), not requiring peer review but open to critique by readers. Letters to the Editors should be no more than 500 words in length and they may have to be edited for publication.

Secondary rupture of a common iliac artery aneurysm after endovascular exclusion and stent-graft infection

To the Editors:

Recently there have been numerous reports on the complications of endovascular grafting of arterial aneurysms, including thromboembolic problems or endoleaks. So far, there are no data available on graft infection after the insertion of endovascular devices. The following case describes the severity of this complication.

CASE REPORT

A 68-year-old man was admitted for endovascular treatment of a symptomatic right common iliac artery aneurysm that had an external diameter of 3.4 cm (Fig. 1). The ipsilateral internal iliac artery was coil embolized by an interventional radiologist 2 weeks before the stenting procedure to prevent retrograde filling of the aneurysm. There was no residual retrograde flow in the right hypogastric artery when the stent-graft was placed. The aneurysm could successfully be excluded by inserting transluminally a Nitinol-Dacron stent-graft (length, 6 cm; diameter, 12 cm; Boston Scientific) using a percutaneous access. The intraoperative and postoperative angiograms and CT scan confirmed the complete exclusion of the iliac artery aneurysm without any evidence of residual flow or endoleakage (Fig. 2).

Seven months later the patient underwent operation because of severe ischemic rest pain in the contralateral left leg, and the patient underwent placement of a femoropopliteal polytetrafluoroethylene (PTFE) graft. The patient's postoperative course was complicated by a graft infection with *Staphylococcus aureus,* and as a consequence of that infection the PTFE graft had to be explanted. At the time of removal of the infected femoropopliteal graft, no additional pelvic CT scan was performed because color duplex examinations did not show any signs of an endoleak. The limb could be salvaged, and the patient was discharged without any clinical or biochemical signs of a remaining systemic or local infection after 21 days. Therefore, neither an Indium-labeled white cell scan nor a Gallium scan was considered to be necessary. Antibiotic treatment was not continued further. Color duplex examination still showed no perfusion of the aneurysmal sac. The patient was readmitted 7 months later with the clinical signs of a septic syndrome and a rupture of the initially successfully excluded right iliac artery aneurysm (Fig. 3).

An emergency operation was performed that confirmed the CT findings of a ruptured mycotic iliac artery aneurysm. There was *S. aureus* in the thrombotic material of the aneurysm and the stent-graft. The aneurysm was excluded, and an extraanatomic axillofemoral reconstruction was performed. The patient's postoperative course was complicated by acute renal failure and the development of a respiratory distress syndrome, which required prolonged ventilatory support. The patient finally died of multiple organ failure.

DISCUSSION

This is the first case reported in the literature in which a successfully treated aneurysm after insertion of an endovascular device ruptured as a result of stent-graft infection. Considering the course of the patient and the microbiologic examinations, there is no doubt that endovascular graft infection occurred after the femoropopliteal bypass procedure and PTFE graft contamination. Reports of iliac stent infection with subsequent arterial necrosis have been published, assuming that this is a rare morbidity considering the frequency of iliac artery stent placement.[1]

In the future there will be an increasing number of patients treated with endovascular devices for aneurysm exclusion. The extent of the disaster that will occur in those endovascular cases where an aortic aneurysm was excluded and systemic or local infection occurs after surgery can easily be imagined. In a recent study, it was suggested that infection of a stent-graft with *S. aureus* would be more

Fig. 1. Isolated aneurysm of the right common iliac artery.

Fig. 2. Postprocedural pelvic CT scan with no signs of residual flow or an endoleak.

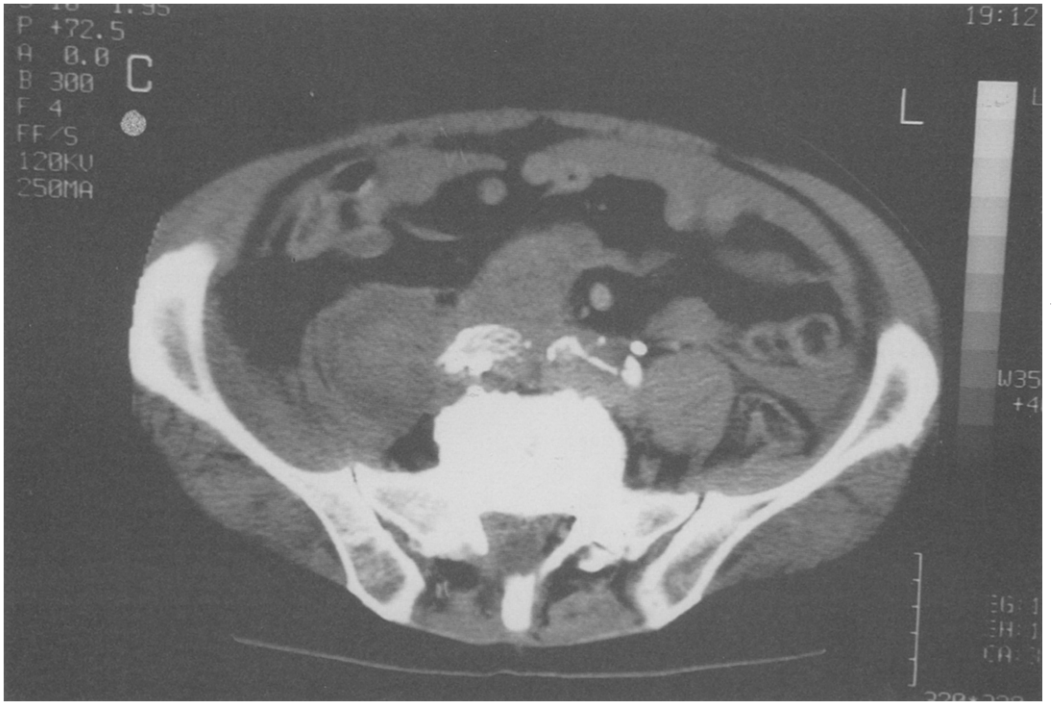

Fig. 3. Ruptured right iliac artery aneurysm with the covered stent floating in the aneurysmal sac and an extensive retroperitoneal hematoma.

severe than with a standard graft after conventional vascular surgery.[2] Therefore, guidelines have to be established concerning the duration and necessity of long-term antibiotic treatment and prophylaxis after endovascular therapy.[3]

Ralf Kolvenbach, MD
M. El Basha, MD
Department of Vascular Surgery
Augusta Hospital
Amalien Str. 9
40472 Düsseldorf
Germany

REFERENCES

1. Deiparine MK, Ballard JL, Taylor FC, Chase DR. Endovascular stent infection. J Vasc Surg 1996;23:529-33.
2. Parsons RE, Sanchez LA, Marin ML, Holbrook KA, Faries PL, Suggs WD, et al. Comparison of endovascular and conventional vascular prostheses in an experimental infection model. J Vasc Surg 1996;24:920-6.
3. Veith FJ, Abbott WM, Yao JST. Guidelines for development and use of transluminally placed endovascular prosthetic grafts. J Vasc Interv Radiol 1995;6:477-92.

24/41/82580

Regarding "Impact of arterial surgery and balloon angioplasty on amputation: A population-based study of 1155 procedures between 1973 and 1992"

To the Editors:

I read with great interest the paper "Impact of arterial surgery and balloon angioplasty on amputation" by Hallett et al., published in the January issue of the *Journal of Vascular Surgery* (1997;25:29-38). The conclusion of the study: "...increased vascular surgery and balloon angioplasty rates have played significant roles in the reduction of major amputations..." is indeed an important one. The shortcoming of the paper is, however, that it "lumps together" in the group "major amputations" patients who had either below-knee or above-knee amputations. It is common knowledge that although most patients with below-knee amputations may be rehabilitated to a well, functional level, those who require above-knee amputations remain severely handicapped. In this latter respect, reconstructive vascular surgery may play a somewhat ambiguous role. In our retrospective review of 300 consecutive patients who underwent major lower limb amputations at the Carolinas Medical Center,[1] we found that in patients who failed vascular surgery the above-knee amputation rate was twice than in those in whom amputation was performed as a primary operation. We conclude that reconstructive vascular surgery, although it is indeed a most effective treatment to prevent the need for amputation *per se*, if it fails, however, is associated with an increased incidence of crippling above-knee amputations. Therefore, it should be used judiciously, especially in cases where the chances of failure is high.

Francis Robicsek, MD, PhD
Department of Thoracic, Cardiac, and Peripheral Vascular Surgery
Sanger Clinic
1001 Blythe Blvd., Suite 300
Charlotte, N.C. 28203

REFERENCE

1. Robicsek F. Vascular surgery: possible adverse effect on extent of subsequent lower limb amputation. South Med J 1992;85: 1190-2.

24/41/82833

Reply

To the Editors:

Dr. Robicsek has emphasized the importance of achieving a below-knee amputation when lower extremity revascularization procedures fail. Our original analysis of more than 1000 lower extremity procedures was searching for epidemiologic changes in *all* amputations in a defined community. We did not initially set out to ascertain the anatomic or surgical nuances that affected whether the major amputation was below-knee or above-knee when revascularization could not be achieved. Dr. Robicsek raises the value of this more-detailed analysis, and we appreciate the stimulus to return to our defined population and seek the answer to his cogent inquiry. As our article indicated, many patients in our community underwent primary amputation without an attempt at revascularization because of advanced ischemia or infection at initial presentation. Whenever possible, a below-knee operation was attempted.

John W. Hallett, Jr., MD
Mayo Clinic
200 First St. SW
Rochester, MN 55905

24/41/82832